DECEMBER, MDCCCLIV.

THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY

AND

JOURNAL FOR RECORDING FACTS & ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

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insects appear to stand in a certain sort of relation to each other. If the branches be put into water there will be no difficulty in the breeding; indeed the moth will be obtained earlier by the warmth of a room than it could be taken at large."

On Entomological difficulties.

Mr. Stainton read a paper entitled "On the difficulties experienced by Entomologists, as exemplified by recent experience with the Larvæ of the Genus Elachista."

Introduction of Bombyx Cynthia into Malta and Italy.

The Secretary, adverting to the mention of the subject at the March and June meetings of this Society, read, from the 'Journal of the Society of Arts,' July 14th, an account, transmitted by Col. Sir Wm. Reid, Governor of Malta, to the Duke of Newcastle, of the successful propagation and distribution in Italy of the larvæ of this moth.

"The following despatch and enclosures have been received through the Foreign Office:—

"Valetta, May 17, 1854.

"My Lord Duke—In my despatch dated 2nd February, 1854, I begged your Grace to inform the Society of Arts, Manufactures and Commerce, that through the very laudable efforts of Mr. Piddington, of Calcutta, with the aid of the directors of the Peninsular and Oriental Company (after many failures), I had received sound eggs of the Indian silkworm (*Bombyx Cynthia*), called by the natives 'Eria' or 'Arriudy,' and which feeds on the leaves of the castor-oil plant.

"These worms having passed through all their mutations in Malta in a healthy state, a second generation, from eggs laid here, are now hatching daily.

"I have also had the satisfaction of learning that cocoons sent from Malta to the Agricultural Society of Turin have produced moths. Eggs have also been sent to Rome, and I am preparing to send them to other places in Italy, where they have already been asked for.

"I am not sure whether the natives of India usually spin the silk of this worm or wind it, although it is said that by a weak solution of alkali they so far dissolve the gum as to be enabled to wind the silk. But we have not yet succeeded in doing so in Malta.

"I enclose, from a Malta newspaper, some account of the periods at which the first brood made their changes, and also, from the 'Piedmontese Official Gazette,' an account of their progress at Turin, both of which may be interesting to the Society of Arts.

"I also send for the Society of Arts a few old cocoons, left by the chrysalides on assuming the state of moths, in the hope that the Society may be able to find some means of dissolving the gum, by which the worm unites the silken threads.

"I have, &c.,

"(Signed) William Reid, Governor.

"His Grace the Duke of Newcastle, K.G."

BRITISH MUSEUM

The Eria Silkworm of Assam.[*]

"Some time since, our contemporary the 'Mail' published the contents of a pamphlet consisting of extracts from the 'Journal of the Asiatic Society of Bengal' on the silkworms of Bengal. The idea of introducing into Malta one of the species, viz., the Eria, or Phalæna Cynthia, of Assam, was then already started; but it was still a question whether the very first step of the introduction could be successfully accomplished. It is now known that this difficulty has been overcome; that eggs have been brought, worms hatched, fed on the leaves of the castor-oil plant, have spun their silk shrouds, and gone through all the processes of their mysterious existence round to the egg again, in a room of the Palace of St. Antonio.

"'The subjoined memorandum, which we are authorised to publish, states the different stages of this process, the dates and appearance of the changes, and, in short, all the leading phenomena of the case:—

"'Through the laudable efforts of Mr. Piddington, of Calcutta, aided by the directors of the Peninsular and Oriental Steam Company, after many unsuccessful attempts, his Excellency the Governor has succeeded in obtaining sound eggs of the Assam silkworm, called in that country the Arrindy, Aria or Eria, and by naturalists the Bombyx Cynthia and also Phalæna Cynthia. These eggs, which arrived in Malta on the 2nd December, 1853, having been placed under the care of Dr. Frendo, M.D., at St. Antonio, produced upwards of 600 worms. The first which were hatched died apparently from cold. But after a fire was kept in the room, and the temperature at between 58° and 68° of Fahrenheit's thermometer, very few died, and latterly none. These worms were fed exclusively on the leaves of the castor-oil plant, the Ricinus communis of botanists.

"'On the 18th January some were observed to change their colour, and became of a light yellow.

"'On the 23rd January they underwent their second change; they then assumed a bluish green colour.

"'On the 28th January they commenced to undergo their third change.

"'On the 6th February they began the fourth mutation.

"'On the 8th February the first cocoon was observed.

"'On the 11th March fires in the room were left off.

"'On the 16th March the worms were in the state of chrysalis.

"'On the 12th April the first moth appeared, and

"'On the 17th April they began to lay their eggs.

"'By the 7th of the present month the greater part of the moths died, after depositing their eggs, the average duration of their lives having been about 14 days. Twelve cocoons weighed 4 drachms and 25 grains: the average weight of a cocoon according to this is 1-12th of a grain.'"

"We have just been informed (May 9) that some of the eggs are hatched this day.

"In addition we republish, extracted from the above pamphlet, all the portion of it relating to the Eria worm. It may be useful for those interested in the subject to compare the series of phenomena observed in Malta and in India, and to note any differences. It certainly is not unreasonable to anticipate much advantage from the 'Eria,' should the climate permit the establishment of this stranger among us. The Palma-Christi grows readily in Malta, and it will be seen from the statements of the pamphlet how great is the productive power of the worm, and how useful a manufacture can be derived from its produce, even under the disadvantage of its not being yet 'wound off.' The last sentence quoted from the pamphlet seems particularly worthy of attention. The Maltese, who have made so much of their cotton, will in any case be able to turn to good purpose the durable produce of the Eria worm, and should practical chemistry prove to have in store the solution of the problem, how to wind off the silk without breaking, a new and most profitable channel for exertion will have been opened to the patient and ingenious workers of these Islands." *

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[*] From the 'Malta Times.'

Silk Culture.†

"At last, after many unsuccessful trials, we have had the good fortune to see the chrysalides hatched in Turin. Our correspondents, persuaded that *will is power*, were not deterred from the task, but by renewed exertions and successive attempts, have succeeded in their object of importing from Bengal to Turin the precious silkworm of the Indies.

"Our colleague Signor S. Giseri, so skilful in the rearing of silkworms, charged especially by the Royal Academy of Agriculture, writes us the following:—'The cocoons delivered to us by you on the 19th of March last, were placed in a dark room, where the mean temperature was kept at 20 centigrammes. I began to despair when I saw a month pass without any result, as at an equal temperature the cocoons of our country take only from 12 to 15 days to bring forth the moth; still the state of the chrysalis was not yet hopeless. The new insects just now come to life are very fine, with large and full wings, of a tawny colour, and having yellow oblong spots. I have already two pairs, which came forth two days since, and three males, which came forth yesterday, and am impatiently waiting for the appearance of their mates. The delay above mentioned was, to say so, providential, as the nourishment of the future worms was not yet ready; the young plants of the Ricinus (*Palma-Christi*) being only as yet furnished with their hard primitive shoots, although we had planted the seeds during the previous winter. I trust now we shall be able to rear up this new insect, which with so much anxiety, perseverance and outlay, has been brought over alive to Piedmont.'

"In the meanwhile we have received the intelligence that the Governor of Malta has successfully brought up a brood of them at Valetta.

"Sir W. Reid informed us, in his last, that he hoped to overcome the difficulties of unwinding the silk from the new worms, by using water slightly alkaline, and, what is perhaps better, water with a small quantity of *soap*, as the soda might perchance weaken the silk, and also injure its spinning quality.

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* The matter referred to by the editor of the 'Malta Times' has already been published in the 'Journal of the Society of Arts.' It will be found in the number for March 3rd of the present year, p. 263.

† Translated from the 'Piedmontese Official Gazette.'

"His Excellency Sir James Hudson, the English Minister in Turin, assures us that when at Rio Janeiro, two years ago, he had heard that a Lombard had come there for the purpose of attempting, on a large scale, the rearing of the Palma-Christi worm, as both this insect and the Palma-Christi thrive well in Brazil.

"Mr. Piddington writes us from Calcutta, on the 17th of March last:—'I have read with pleasure the various notices of the Bombyx Cynthia inserted in the 'Official Gazette' of Turin. I know that these silkworms thrive at Malta, although they have been somewhat affected by the cold. I have written to our common friend, the Governor of Malta, to inform him that the temperature of Assam varied from between 57° and 40° Fahrenheit, the temperature being 68° F. (20 centigrade, 16° R.), and that the north and north-east winds blowing there are very cold. The seed I have forwarded to him came from Bogorah (?), half-way between Calcutta and Assam, where the cold is very intense. There is a great quantity of ice in winter in the plains at Hoogly, distant about 25 miles north of Calcutta, by reason of the evaporation of water in porous and shallow pans. I have also brought up in the winter many of those silkworms (*une couvée de vers*), which I had not hitherto attempted, and I have seen many perish in the early stages of their existence, the formation of the cocoons retarded, and every insect beginning to spin whilst still very small. In this we must admire one of the laws of Providence, to which every animal, and especially such prolific insects, must conform, namely, that there are seasons in which, owing to the atmospheric changes, and for want of sufficient nourishment, the insects die in great quantities. Were it not so, the world would not be large enough to contain them. I also warned Sir Wm. Reid that perhaps our rooms are too light for these insects, the light being injurious to their eggs, as it is to the germination of plants. In its natural state, the Bombyx Cynthia lives under the shade of green foliage, a very scanty light penetrating into the miserable huts of our ryots (peasants of Bengal). It is also believed that too much light is injurious to the production of silk. I give you a hint of these ideas, without commenting on them, being persuaded that you will exert yourself in every way for the successful rearing of these valuable insects. Lastly, let us bear in mind that these poor little animals are the first of their kind which have crossed the ocean, and been installed in the splendid palaces of the Knights of Malta, and that if you have an idea of presenting them at Court *je ne reponds pas des suites.*'

"Our spirited Mr. Piddington finishes by begging us to send his kind compliments to Signor F. Berzonzi, at Boulogne-sur-Mer, to whom we owe the first idea of the attempt to enrich Italy, if possible, with the new silkworm of the Indies.

"The problem, then, for the naturalist seems solved. This insect can be transported to, and successfully reared in, latitudes differing so widely from those of Turin and Assam in Bengal. The common Ricinus (*Palma-Christi*), especial food of the Cynthia, takes well in Piedmont; and already the production of the seeds more than pays the cost of cultivation. In the Province of Nice, in the Island of Sardinia, and in the more southern countries of Italy, the Ricinus grows luxuriantly. The silk-growers will now try how far it will answer to couple the rearing of the silkworm of India with that of China. The first yields in its native land seven crops of cocoons in the year, and supplies us with a finer and more beautiful silk. Naturalists and silk-growers will soon have the opportunity of trying a mixture of the two breeds; meanwhile, the experiments now made give every man to expect that the most sanguine hopes of those interested in the cultivation of silk will ultimately be realised. Let us close these few lines addressed to our numerous correspondents with the observation recently made by the celebrated naturalist, Geoffroy de St. Hilaire, President of the Paris Society of Zoological Acclimatation:—'The number of the species of animals generally reckoned by the modern naturalists exceeds 140,000, the greatest part of which will be perhaps always useless to man; whilst up to the present time we have not been able to domesticate more than 43 species.' How much, then, remains to be done, and why, for instance, should we not follow the example of the Canary Islands, which have already more than doubled the value of their rural products by the easy cultivation of cochineal, and attempt to introduce at once this valuable insect into the Province of Nice, or, at least, into the Island of Sardinia, where the Cactry spantia [? Cactus Opuntia] thrives in abundance.

"G. F. BARUFT.

"Turin, April 29th, 1854."

Mr. Westwood said that Professor Solly had made several experiments on the cocoons sent by Dr. Templeton from Malta, and he believed he had discovered the much-desired method of unwinding the silk from the cocoon.—*J. W. D.*

SOCIETY OF BRITISH ENTOMOLOGISTS.

October 3, 1854.—Mr. HARDING, President, in the chair.

The President exhibited a specimen of Lithosia muscerda taken by Mr. Buxton, and also the following Lepidoptera taken by himself:—

Noctua hebraica (N. glareosa of Stephens) taken near Dartford: this insect is rare so far South, but is not uncommon in the North of England.

Xanthia croceago and Hadena lutulenta, taken in Darenth wood.

Opostega crepusculella, taken at Deal.

The President called the attention of the meeting to the food-plants of Lepidopterous larvæ: he had collected on the Kentish coast a great number of larvæ, belonging to the families of Tortrix and Tinea, feeding on a variety of plants: many of these he exhibited last season, and two of the insects bred from these proved to be new. Many species of insects feed on a single species of plant, while others were less particular, feeding on several species: on the present occasion, he (the President) would confine his observations to species of insects which fed on a single species of plant, but on a future occasion he would extend them to those which fed on several: he exhibited the following:—

Ebulea crocealis, its pupa and food-plant, Inula dysenterica.

Coleophora fuscedenella, its larva-case and food-plant, Alnus glutinosus.

Coleophora Troglodytella, its larva-case and food-plant, Eupatoria cannabina: this larva, when full fed, quits the plant on which it has been feeding, and attaches itself to any other in the vicinity, and there undergoes its metamorphosis: it is very subject to the attacks of an ichneumonideous parasite, the male of which is winged and the female apterous.

Pterophorus lithodactylus, its pupa-case and food-plant, Inula dysenterica.

Tortrix spectrana, its pupa and food-plant: the larvæ draw together the tops of the common reed (*Arundo phragmites*) and sometimes also the leaves of the horse-radish (*Cochlearia armoracia*).

Tortrix Viburnana: the larva of this species is very beautiful, the ground-colour being white with black spots: it feeds on Chlora perfoliata.

The President then exhibited the following Coleoptera:—

Nedyus Echii, bred from the roots of Echium vulgare.

Lixus bicolor, bred from Erodium maritimum, found at Deal.

Leiodes cinnamomeus, found at Darenth wood.

Ectinus aterrimus; Deal.

Mr. Dalman exhibited specimens of Hypochalcea ahenella, taken at Deal, and a Simaëthis, new to science; the larva of this last was taken by Mr. Harding near Dover, feeding on the common pellitory (*Parietaria officinalis*). Mr. Stainton proposed to call this species Simaëthis Parietana, a name to which there could be no objection.

Mr. Millar exhibited specimens of Hipparchus Papilionarius, Acronycta Ligustri, &c.

The following gentlemen were proposed as members:—Mr. Henry Jobson, of Suffolk Street, Bow; Mr. Joseph Thorne, of Morpeth Street; and Mr. Thomas R. Oxley, of Blackfriars Road.—*J. T. N.*

NOTICES OF NEW BOOKS.

‘*The Annals and Magazine of Natural History.*’ Nos. 80, 81 and 82, dated August, September and October, 1854; *price* 2*s.* 6*d. each.* London: Taylor & Francis, Red Lion Court, Fleet Street.

No. 80 contains the following papers:—

‘Researches on the Development of Viviparous Aphides.’ By Waldo I. Burnett, M.D., Boston. Extracted from Silliman's ‘American Journal’ for January, 1854.

‘On the true position of the Canaliferous Structure in the Shell of Fossil Alveolina (D'Orbigny).’ By J. H. Carter, Esq.

‘Notice of some New Species of British Nudibranchiata.’ By Joshua Alder and Albany Hancock.

‘Notes on the Ornithology of Ceylon, collected during an Eight Years' Residence in the Island.’ By Edgar Leopold Layard, F.Z.S., C.M.E.S., &c.

‘On some New Cretaceous Crustacea.’ By Frederick M'Coy, F.G.S., Hon. F.C.P.S., Professor of Natural Science in the University of Melbourne, &c.

‘On the Aclis unica, *Auct.*’ By William Clark, Esq.

‘On some Arctic Species of Calanidæ.’ By John Lubbock, Esq., F.Z.S.

‘Description of a New Genus and Species of British Curculionidæ.’ By T. Vernon Wollaston, M.A., F.L.S.

'On the Genus Lycium.' By John Miers, Esq., F.R.S., F.L.S., &c.

'Note on the supposed Antheridia of Rhamnus.' By J. S. Burdon Saunderson, M.D. (This paper forms part of the Transactions of the Botanical Society of Edinburgh.)

Proceedings of Societies:—Zoological—Botanical of Edinburgh.

Miscellaneous:—On the Embryogeny and Propagation of Intestinal Worms; by MM. Ercolani and Vella. On two New Species of South-American Birds; by Philip Lutley Sclater. Description of a New Species of Hyrax from Fernando Po; by Louis Fraser, H.M. Consul at Whidah.

The new curculionideous insect described by Mr. Wollaston is one of the Cossonides of Schönherr, yet it is so singularly formed, as respects its five-jointed funiculus, that it may be regarded as connecting these with the Rhyncophorides, in which a like number of joints occasionally obtains. Mr. Wollaston calls the insect Pentarthrum Huttoni: four specimens were extracted, by Mr. Hutton, from the hard and undecayed wood of a cherry-tree at Alphington, in the vicinity of Exeter, in November, 1853.

No. 81 contains the following papers:—

'On the Occurrence of "Cinchonaceous Glands" in Galiaceæ, and on the Relations of that Order to Cinchonaceæ.' By George Lawson, F.R.P.S., F.B.S.E., Demonstrator of Botany and Vegetable Histology to the University of Edinburgh. (This forms part of the Transactions of the Botanical Society of Edinburgh.)

'Miscellaneous Notes on the Fauna of Dacca, including Remarks made on the line of march from Barrackpore to that Station.' By Capt. Robert C. Tytler, of the 38th Regiment Bengal Native Light Infantry.

'A Reply to some Statements of Dr. Williams on the Controversy respecting the Branchial Currents in the Lamellibranchiata.' By Joshua Alder, Esq.

'On the Genus Lycium.' By John Miers, Esq., F.R.S., F.L.S., &c.

'Rejoinder to Professor Milne-Edwards and Mr. Bowerbank.' By Professor Sedgwick.

'Notice of a New Species of Caulerpa, By R. K. Greville, LL.D.

Bibliographical Notices:—'Geodephaga Britannica;' by J. F. Dawson. 'The Medals of Creation, &c.;' by (the late) G. A. Mantell, F.R.S. 'Genera Plantarum Floræ Germanicæ iconibus et descriptionibus illustrata;' auctore R. Caspary. 'The Microscope and its application to Clinical Medicine;' by Lionel Beale, M.B.

'The Microscope, its History, Construction and Applications;' by Jabez Hogg, M.R.C.S.

Proceedings of Societies: — Royal — Zoological — Botanical of Edinburgh—Linnean.

Miscellaneous:—On the Development of Cænurus cerebralis; by Professor Van Beneden. On the Capture of Thecacera pennigera; by William Thompson. Note on Athyrium rhæticum; by S. O. Gray. On the Occurrence of the Larvæ of Sarcophaga in the Human Eye and Nose; by Dr. E. Grube; from the Archive für Naturgeschichte, xix. p. 282.

No. 82 contains the following papers:—

'On the Mechanism of Aquatic Respiration, and on the Structure of the Organs of Breathing in Invertebrate Animals.' By Thomas Williams, M.D. Lond.

'On the remains of a Gigantic Bird (Lithornis Emuinus) from the London Clay of Sheppey.' By Jas. Bowerbank, F.R.S., &c.

'Notes on the Ornithology of Ceylon, collected during an Eight Years' Residence in that Island.' By Edgar Leopold Layard, F.L.S., C.M.E.S., &c.

'On the Fertilization of Ferns.' By W. Hoffmeister.

'Upon a New Species of Alpheus discovered upon the Coast of Herm (Channel Islands).' By W. V. Guise, Esq., F.G.S.

'Descriptions of three New Species of British Actiniæ.' By Philip H. Gosse, A.L.S.

Bibliographical Notices:—The Ferns of Great Britain. Illustrated by John E. Sowerby. The Descriptions, Synonyms, &c., by C. Johnson.

Proceedings of Learned Societies:—Royal—Zoological—Linnean—Botanical of Edinburgh.

Miscellaneous: — On the Cœnurus cerebralis of Sheep; by Dr. Kuchenmeister, from the 'Bulletin l'Acad. Royale de Belgique,' 1854, p. 306. On the Occurrence of Zinc in the Vegetable Organism; by A. Braun, from Pogymdorff's 'Annalen,' vol. xcii., p. 175. Notes on the Bovine Animals of the Malay Peninsula; by George Windsor Earl.

'*Shells and their Inhabitants. The Genera of Recent Mollusca arranged according to their Organization.*' By HENRY and ARTHUR ADAMS. London: Van Voorst. Part XV., dated August, and Part XVI., dated September, 1854. 28 pages of letter-press and 4 plates; price 2*s.* 6*d.* each. Demy 8vo. plain; 5*s.* Royal 8vo. coloured.

Part XV. contains the following genera:—Fissurellidæa, *D'Orbigny;* Macrochisma, *Swainson;* Pupillia, *Gray;* Cemoria, *Leach;* Rimula, *Defrance;* Emarginula, *Lamarck;* Scutus, *Montfort;* Dentalium, *Linnæus;* Antalis, *Aldrovandus;* Tectura, *Audouin* and *Milne-Edwards;* Scurria, *Gray;* Helcion, *Montfort;* Scutellina, Lepeta and Gadinia, *Gray;* Patella, *Linnæus;* Nacella, *Schumacher;* Lophyrus, *Poli;* Callochiton, *Gray;* Lepidopleurus, *Risso;* Leptochiton and Tonicia, *Gray;* Chiton, *Linnæus;* Chætopleura, *Shuttleworth;* Onithochiton, Enoplochiton, Schizochiton, Mopalia, Katharina, Cryptochiton, Amicula and Plaxiphora, *Gray;* Lorica, *H. and A. Adams;* Cryptoconchus, *Blainville;* Acanthochites, *Risso;* and Crytoplax, *Blainville.*

Part XVI. describes the following genera:—Actæon, *Montfort;* Buccinulus, *Plancus;* Aplustrum, *Schumacher;* Hydatina, *Schumacher;* Bullina, *Ferussac;* Cylichna, *Lovén;* Utriculus, *Brown;* Diaphana, *Brown;* Tornatina, *A. Adams;* Volvula, *A. Adams;* Bulla, *Klein;* Haminea, *Leach;* Akera, *O. F. Muller;* Scaphander, *Montfort;* Atys, *Montfort;* Physema, *H. and A. Adams;* Smaragdinella, *A. Adams;* Cryptophthalmus, *Ehrenberg;* Philine, *Ascanias;* Phanerophthalmus, *A. Adams;* Chelidoneura, *A. Adams;* Aglaia, *Renier;* Posterobranchæa, *D'Orbigny.*

'*The Transactions of the Entomological Society of London.*' New Series. Vol. III., Part 2. Published November 1, 1854; 32 pp. Trans., 16 Proc., 4 plates; price 3*s.* 6*d.*

The papers in this part are as follow:—

'Characters of undescribed Lucanidæ, collected in China, by R. Fortune, Esq.' By W. Wilson Saunders, Esq., F.R.S., &c. (concluded).

'Descriptions of Two Species of the Genus Hemerobius of Linnæus,

new to this Country, with Remarks on the Nomenclature of Coniopteryx and on Orthotænia, Buoliana, &c.' By John Curtis, Esq., F.L.S., &c.

'Supplemental Descriptions of Species of African, Asiatic and Australian Cetoniidæ.' By J. O. Westwood, Esq., F.L.S., &c.

'Notes on the Species of Amycterus and allied Genera, with Descriptions of some New Species.' By G. R. Waterhouse, Esq.

Journal of Proceedings.

Anecdote of a Terrier.—About three months since a friend of mine lost a favourite terrier dog, and, after some days' absence, supposed it had been stolen. Seventeen days from that of its being missed, some labourers at work in a field sat down on the bank to have their dinner, and soon had their attention drawn to a low moaning noise, which at last they discovered to issue from a rabbit's burrow: the poor dog was at once thought of; and eleven feet from the mouth of the hole, after much labour in digging, he was discovered wedged in: when taken out he could not stand, but by judicious management in feeding soon recovered.—*T. Catchpool, jun.; Colchester, September* 14, 1854.

Occurrence of Hoopoes in the Isle of Wight.—When in the Island in August last I saw hoopoes in several collections, and was told that they generally occur there in April. Two were killed at one shot by the gamekeeper at —— Warren in April last. —*John Dutton; St. Peter's Place, Hammersmith, September* 7, 1854.

Occurrence of the Red-necked Phalarope near Penzance.—A specimen of this elegant little wader has at last turned up in our Land's End district, and I believe it is the first recorded instance of its occurrence in Cornwall. It is in winter plumage, or it is otherwise an immature bird: the back is very dark, and several of the feathers, especially the scapulars, are broadly margined with reddish yellow.—*Edward Hearle Rodd; Penzance, October* 30, 1854.

Capture of Deilephila Galii.—When out mothing, between Kingsdowne and Margaret's Bay, on the 22nd of July, about half-past nine, I took a female specimen of this rare Sphinx in first-rate condition: it is now in the possession of Mr. F. Bond. —*J. Thorne; Morpeth Street, Bethnal Green.*

Occurrence of Elachista triseriatella near Dublin.—It will interest the Micro-Lepidopterists to hear that I took a fine specimen of the above species on some nettles at Howth, County Dublin, on the 1st of July, of the present year. This is, I believe, only the second instance of the occurrence of this beautiful little moth; the first specimen (on which the species was founded) having been taken on Durdham Downs, near Bristol.—*A. R. Hogan; Charlton, Dundrum, near Dublin, October* 10, 1854.

Note on Sirex Juvencus.—During the recent hot weather I have repeatedly observed several insects buzzing about some lilac trees, in the small plot of ground adjoining my place of business in the midst of the town. These making their appearance day after day, my curiosity was aroused, and two of them were captured, and turned out to be either Sirex gigas or some nearly allied species. I have no specimen or figure by me at present to identify them with, but my impression is that S. gigas has the body more elongated. The great dissimilarity in size, however (one being four times the size of the other), struck me as being remarkable, the sex being apparently the same in both specimens. Both are forwarded herewith, in order that the species may be correctly named. Most probably they have been imported with timber from Norway or some of the Baltic ports.—*G. Norman; Hull, September* 11, 1854.

[The species is Sirex Juvencus: the discrepancy in size is not unusual.—*Ed.*]

Capture of Carabus intricatus in Devonshire.—I see in the last number of the 'Zoologist,' that Mr. Waterhouse stated that the Rev. Mr. Hore had taken, in the neighbourhood of Plymouth, four specimens of Carabus intricatus, a species which was looked upon as a doubtful native. As it is desirable to add all the testimony in favour of so beautiful an insect being indigenous to this country, I beg to say that Dr. Leach took it at Tavistock and Bickley Vale: a friend told me that a gentleman named Salton took one in Bickley Vale; and I have this summer found the thorax of two and the elytra of one also in Bickley Vale: of course mine is no capture, but shows they are natives.—*J. J. Reading; 5, Union Street, Plymouth, September* 26, 1854.

Description of Lathrobium carinatum, an apparently undescribed British Coleopterous Insect.—Deep jet black, very glossy, sparingly clothed with griseous pubescence: head large, fully one-third wider than the thorax, orbicular, depressed closely and very distinctly punctured, with an impression a little before the vertex in front; labrum rufous, fringed with golden hair; mandibles long, curved, prominent, rufous, black on the outer edge and at the tip; antennæ elongate, as long or longer than the head and thorax together, graceful, rufous, the basal joint with a dusky annulation; palpi also rufous. Thorax narrow, elongate-oval, much depressed, coarsely punctulated, with a distinctly elevated central carina, which is exceedingly smooth and glossy. Scutellum obtusely triangular, punctulated. Elytra bright blood red, black for one-third the length at the base, distinctly punctulate, somewhat wider than the thorax, parallel, depressed, the suture elevated, with a stria on each side. Abdomen depressed, strongly margined, very finely punctured, the antepenultimate segment narrowly edged with white, the last sparsely covered by stout black diverging hairs; beneath finely punctured and pubescent, black. Legs elongate, black, the trochanters rufo-brunneous, the apices of the tibiæ and the tarsi rufous and covered with aureous pubescence. *Male*, with the fifth segment beneath sinuated, the sixth canaliculate. *Female*, with the penultimate segment beneath a little produced and rounded: length 3—3½ lines. This very distinct insect is certainly the most beautiful of its genus; the bright blood red of its elytra contrasting strongly with the shining black of its body; whilst the large orbicular head, narrow carinated thorax, elongate antennæ and legs give it quite the graceful appearance of a Stilicus. It would appear to be very rare, two specimens only having come beneath my notice; one, a male, I took amongst gravel, near the river Irthing, Cumberland, in June, 1847; the other, a fine female, was captured in a similar locality, on the Devil's Water, Northumberland, by

George Wailes, Esq., at the Club's field-meeting in May last.—*Thomas John Bold; Angus' Court, Bigg Market, Newcastle-on-Tyne, August* 29, 1854.

On the Transformation of Heliothis Dipsacea.—A description of the larva of Heliothis Dipsacea, with a few remarks on the perfect insect and its transformations, may perhaps be useful as well as interesting to the entomological readers of the 'Zoologist,' since I am not aware that it has hitherto been correctly described by any author on British Lepidoptera: the description in Westwood and Humphreys' work appears certainly erroneous; there it is given as "red with the head ash-coloured and interrupted white lines on the body:" with regard to other authors I cannot at this moment speak with such certainty, since, not possessing, I am unable to refer to them, though I think it is not unreasonable to conclude that Westwood and Humphreys' being the latest *complete* work on the subject, it has followed the previous authors, except where direct acknowledgment is made of the discoveries and observations of other individuals. During the last week in July last some eggs were laid by a female of H. Dipsacea, captured by myself on the heath; these eggs I placed in a flower-pot planted with various plants, such as the three common species of heath, some grasses and broad-leaved plantain, covering the pot with gauze; within a week they were hatched, and, much to my annoyance, some escaped before I was aware of it, from the gauze being too coarse; however, having rectified this error, I am enabled, from those retained, to give the subjoined description, taken at the different periods of their growth:—The egg itself is very beautiful, being perfectly spherical, but small for the size of the moth, of a bright but not *deep* yellow, and the whole surface closely and obliquely ribbed, giving it the appearance of finely-watered silk. From the egg to the third moult—being then about two-thirds of an inch long, cylindrical and slender for the length—they are of a murky though semitransparent olive-green, each segment with about eight black dots, arranged in pairs, and the head clouded with a darker colour. After the third moult the permanent colours begin to appear, though they vary again slightly after the next; they are now dark oil or olive-green, striped longitudinally with pale green, two stripes on each side being broader than the rest—one just above the feet, and one between that and the centre of the back. Each segment retains the former black dots, which are now plainly tuberculate, and from each issues a small black spine; the head pale green, distinctly variegated with the deepest green, almost *black;* neck the same deep black-green, under side dark green with short spiny hairs, and feet black-green; anal segment variegated like the head. After the fourth and last moult the general distribution of the colours and markings is still the same, but the broad pale-green stripe above the feet is now, in most specimens, pure white, though in some tinged with yellow; above that is a broad pale green stripe, edged on the upper side with bright yellow and interrupted with black markings, corresponding with the segments and containing the spiracles, which are white or yellowish; these black markings issue from the stripe next above, which is in most cases black, in some deep green; above this is a narrower pure white or pale yellow stripe; the back is dark-green, paler between the segments, and with four or five slender yellowish longitudinal lines; all the stripes run throughout the whole length of the body, but these lines stop at the black nape of the neck. The under side is now pale green, the feet slightly rufous, and the head and anal segment as after the third moult. The black tubercles and spines do not appear to increase in size with the growth of the caterpillar, so that they are scarcely visible when it is full fed; the length when full grown is about an inch and a half to two inches, and they appear liable to little or no variation, except occasionally in the general depth of colouring. About seven weeks from being hatched they retired just beneath the surface of the earth, and changed to the pupa state: this change appears to be the most critical of all, for but one completed it, and this has since died, the rest dying at different stages of development. The pupa itself is about seven or eight lines long, the posterior extremity slightly elongated and furnished with a double, stiff, curved spine, and enclosed in a strong though not hard cocoon formed of silk and particles of mould. The failure in changing to the pupa state is the more vexing as their growth throughout the larva state was remarkably free and healthy. The perfect insect, from some cause or other, was very rare this year, insomuch that in twelve days, working several hours each day, I obtained but six specimens; it did not, however, vary from its usual time of appearance. With regard to the food of this larva, though I have no doubt it is (here at least) solely heath, yet those I reared infinitely preferred the plantain, and the green, unripe seed-vessels in preference to the leaves; in fact, for the last month I fed them entirely on the seed-stems; they would also eat the common dock. When stretched motionless along a green shoot of heath they are almost indistinguishable, and, on whatever plant feeding, it would be difficult to detect them without an exceedingly close search, which may (together with its being thinly dispersed over a large tract of ground, thickly clothed with its food) account for its having hitherto been unobserved. Out of about ninety specimens of the perfect insect, containing about an equal proportion of both sexes, that I have myself captured within four years, not one before ever laid an egg; in fact, I think it may be correctly laid down as a general rule that the further the Noctuidæ are removed from the Bombycidæ in form and structure, the more infrequent are the instances of eggs being laid after capture; and probably a good entomological anatomist, if there be such among our collectors, would be able to give some structural reason for this, and on which some useful generic distinctions might be based. I fear that by this time many will have thought me needlessly prolix in the description of *one* species only, but in reading and comparing descriptions given by some authors with the subjects described, I have often thought that they might, with great propriety, say each to himself, "brevis esse laboro, obscurus fio;" and, at the risk of running into the opposite error, I have endeavoured to avoid this one. I have taken as accurate a coloured drawing as I am able of this larva, and as I hear that Messrs. Westwood and Humphreys are issuing a new edition of their beautiful work, I shall be too happy to place it at their service, if they should consider it of any use to them, and I take this opportunity of so doing through the medium of the pages of the 'Zoologist.'—*Octavius Pickard-Cambridge; Bloxworth, Dorset, October* 25, 1854.

Notes on the Capture of some of the rarer British Hydrocantharidæ.

By the Rev. Hamlet Clark, M.A.

It is hardly matter for surprise that these groups of water-beetles, however interesting in themselves, have not received from entomologists that attention which has been bestowed upon the Geodephaga, Curculionidæ, &c.: their habitats require for their capture a distinct and cumbersome apparatus; there appears among them but little variety of form; and the species known to be indigenous are few and often local: nevertheless, a study of their economy well rewards the naturalist; their habits and metamorphoses are as interesting as they are little known; while the assumed limited number of native species encourages the hope that an acquaintance with all is not impossible.

During the last two years I have paid some attention to these groups; and, with the object of inviting the attention of others, send you some memoranda respecting their localities and captures. I should state that the nomenclature I adopt is that of Dr. Schaum, at p. 1887 of your magazine.

Haliplus elevatus. Sparingly in the reservoir near Daventry.

„ mucronatus, *Steph.* Two specimens in Holme Fen, Huntingdonshire, 1853. This appears to be either a very local or a rare insect with us; though Dr. Aubé has taken it very abundantly in the neighbourhood of Compiègne.

„ fulvus, *Fab.* Not uncommon.

Chemidotus cæsus. Common in the neighbourhood of Whittlesea Mere in June.

Hydroporus decoratus, *Gyll.* I took a few specimens of this insect in Horning Fen, Norfolk, in a ditch densely covered with duck-weed.

„ confluens, *Fab.* Very sparingly at Holme Fen. I have never met with this species (common, according to Stephens) in any abundance.

„ Davisii, *Curt.* Near Norwich, in a small gravelly brook. May, 1854.

„ assimilis, *Payk.* In the utmost profusion in the lake near Kean's Cottage, Isle of Bute, September, 1854; also near Northampton, August, 1853.

„ halensis, *Fab.* Five specimens, as the result of three days' hard work, in a lake near Loch Spelvie, Isle of Mull, September, 1854.

„ elegans, *Ill.* A dark variety of this species common in the Isle of Bute, September 1854.

„ parallelogrammus, *Ahrens.* In profusion near Sheerness.

„ 9-lineatus, *Rudd.* In lake near Kean's Cottage, Isle of Bute, September, 1854. Not common.

„ vittula, *Erichs.* Sparingly in the neighbourhood of Norwich, May, 1854.

Hydroporus nigrita, *Fab.* = trivialis, *Steph*. This species has been overlooked by Schaum, and is not included in his catalogue. I have taken it on several occasions in Norfolk in small road-side grassy puddles. Never in deeper ditches or pools.

„ rufifrons, *Dufts.* Whittlesea Mere.

„ oblongus, *Steph.* Of this rare and beautiful insect I took five examples in and about Horning, Norfolk, May, 1854.

„ Gyllenhalii, *Schiodte.* In the district of Whittlesea Mere, occasionally met with.

„ tristis, *Payk.* In abundance near Oban, Argyle, in peat-holes on the hills. I took what I believe to be a constant variety of this species in a lake by Achnacraig, Mull.

„ angustatus, *Sturm.* In profusion in Huntingdonshire: one specimen near Crinan, Argyle.

„ obscurus, *Sturm.* Plentifully in Argyle, near Connel Falls.

„ umbrosus, *Gyll.* This species is apparently very local. I took several specimens in boggy ground near Norwich, in a little swampy puddle of most uninviting aspect.

„ granularis, *Fab.* Not uncommon.

„ geminus, *Fab.* Common in shallow, muddy, fen ditches near Peterborough. This insect, like assimilis, *Payk*, seems to prefer open shallow water to the cover of weeds.

Besides the above, I have two or three species which cannot be referred to any known British species: one which I took near Oban, September, 1854, has been determined by Mr. Adam White and Dr. Power as H. melanarius, *Sturm*, of the European collection in the British Museum.

Agabus agilis, *Fab.* Among weeds and in grass-margined ditches in Norfolk: once in some abundance in Horning Fen.

„ arcticus, *Payk.* In a lake in Orogan, Isle of Mull, September, 1854. I took the insect only by wading, and brushing with my net a species of short grass that covered a small rock at the bottom of the lake, in three or four feet water.

„ striolatus, *Gyll.* This is an early spring insect: it may be distinguished from all other species by its very parallel sides. I took one specimen in Horning Fen, May, 1854. See note by Schaum, Zool. 1932.

Colymbetes notatus, *Fab.* This insect is certainly local, but when found not uncommon; Whittlesea Mere, 1853.

„ bistriatus, *Bergst.* In small pools on hills near Oban, and also in Mull, September, 1854.

Colymbetes Grapii. Near Norwich, not uncommon, and also more sparingly in the fens of Huntingdonshire.

Hydaticus transversalis, *Fab.* Common in deep weedy ditches throughout fens of Huntingdon and Ely.

„ Hybneri, *Fab.* More rarely met with; two specimens from ditches near Holme Station.

Dytiscus lapponicus, *Gyll.*, *Aubé*, *Germar*, *&c.* I have much pleasure in being able to add the above very distinct species to our British Fauna, having captured four specimens on four separate occasions in a small very deep lake in the Isle of Mull, September, 1854. I recognised the insect, as soon as I saw it in my net, from its smaller size, and frequent luteous lines along the elytra, as either lapponicus or septentrionalis of Aubé, and hence spent many hours in endeavouring to obtain a series of examples. The following extract from Gyllenhall's accurate description will sufficiently characterise the species: — "Statura et summa affinitas præcedentis (marginalis) sed fere duplo minor et distinctus; elytrorum forma ut in priore, et jam supra nigra, margine late luteo; in disco præterea lineæ plurimæ longitudinales, in singulo elytro circiter 18, tenues obscure lutescentes, sæpe obsoletæ, quasi e paginâ inferiore translucentes." I have little doubt but that D. septentrionalis will prove a mere variety of lapponicus; the only difference being, according to Aubé, v. 65, that the female has the smooth form of elytra.

Gyrinus minutus, *Fab.* Not uncommon in a small lake near Loch Spelvie, Isle of Mull.

„ bicolor, *Payk.* In abundance at Southend and Sheerness.

I should be very glad if any of your readers could communicate information respecting H. Scalesianus, *Steph.* Stephens, Mandib. ii. 57, mentions a pair taken by Mr. Scales in Norfolk, but unfortunately does not notice the month or the locality: has it ever been taken since? According to Schaum and Aubé it is extremely local on the Continent.

Hyd. unistriatus, *Illig.*, is also an insect of which we know little, though taken by collectors occasionally twenty years ago.

HAMLET CLARK.

Northampton, October 10, 1854.

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